In the claims:

1. (Currently amended) A method to monitor the response of a patient being treated for cancer by administering an anti-cancer agent comprising the steps of:

(a) determining the level of expression of one or more genes or gene products in a first biological sample taken from the patient prior to treatment with the anti-cancer agent;

(b) determining the level of expression of one or more genes or gene products in at least a second biological sample taken from the patient subsequent to the treatment with the anti-cancer agent; and

(c) comparing the level of expression of one or more one genes(s) or gene products in the second biological sample with the level of expression of one or more one genes(s) or gene products in the first biological sample;

wherein a change in the level of expression of one or more genes or gene products in the second biological sample compared to the level of expression of one or more genes or gene products in the first biological sample indicates the efficacy of the treatment with the anti-cancer agent, and wherein the one or more genes or gene products are regulated by histone deacetylase.

2. (Original) The method of claim 1, wherein the anti-cancer agent is an inhibitor of histone deacetylase.

3. (Original) The method of claim 1 or 2, wherein one or more genes are selected from the group consisting of SEQ ID NOs: 1-19.

4. (Original) The method of claim 1 or 2, wherein one or more gene products are polypeptides selected from the group consisting of SEQ ID NOs: 20-37.

5. (Currently amended) A method to predict the response of a patient to an anti-cancer agent, comprising the steps of:

(a) determining the level of expression of one or more genes or gene products in a first biological sample taken from the patient prior to treatment with the anti-cancer agent;

(b) determining the level of expression of one or more genes or gene products in at least a second biological sample taken from the patient, wherein the second biological sample is exposed to the anti-cancer agent; and

(c) comparing the level of expression of one or more one genes(s) or gene products in the second biological sample with the level of expression of one or more one genes(s) or gene products in the first biological sample;

wherein a change in the level of expression of one or more genes or gene products in the second biological sample compared to the level of expression of one or more genes or gene products in the first biological sample predicts the response of the patient to an anti-cancer agent, and wherein the one or more genes or gene products are regulated by histone deacetylase.

6. (Original) The method of claim 5, wherein the anti-cancer agent is an inhibitor of histone deacetylase.

7. (Original) The method of claim 5 or 6, wherein one or more genes are selected from the

group consisting of SEQ ID NOs: 1-19.

8. (Original) The method of claim 5 or 6, wherein one or more gene products are polypeptides selected from the group consisting of SEQ ID NOs: 20-37.

9. (Currently amended) A method for identifying a compound useful for the treatment of cancer comprising the steps of:

(a) analyzing the level of expression of one or more genes and/or gene products in a cell or tissue sample prior to treatment with the compound;

(b) analyzing the level of expression of one or more genes and/or gene products in a cell or tissue sample subsequent to treatment with the compound;

wherein a variation in the expression level of the gene and/or gene product is indicative of drug efficacy, and wherein the one or more genes or gene products are regulated by histone deacetylase.

10. (Original) The method of claim 9, wherein the compound is an inhibitor of histone deacetylase.

11. (Original) The method of claim 9 or 10, wherein one or more genes are selected from the group consisting of SEQ ID NOs: 1-19.

12. (Original) The method of claim 9 or 10, wherein one or more gene products are polypeptides selected from the group consisting of SEQ ID NOs: 20-37.

13. (Currently amended) A method for providing a patient diagnosis for cancer, comprising the steps of:

(a) determining the level of expression of one or more genes or gene products in a first biological sample taken from the patient;

(b) determining the level of expression of one or more genes or gene products in at least a second biological sample taken from a normal patient sample; and

(c) comparing the level of expression of one or more genes or gene products in the first biological sample with the level of expression of one or more genes or gene products in the second biological sample;

wherein a change in the level of expression of one or more genes or gene products in the first biological sample compared to the level of expression of one or more genes or gene products in the second biological sample is a diagnostic of the disease, and wherein the one or more genes or gene products are regulated by histone deacetylase.

14. (Original) The method of claim 13, wherein one or more genes are selected from the group consisting of SEQ ID NOs: 1-19.

15. (Original) The method of claim 13, wherein one or more gene products are polypeptides selected from the group consisting of SEQ ID NOs: 20-37.

16. (Original) An array comprising two or more probes corresponding to two or more genes

selected from the group consisting of SEQ ID NOs: 1-19.

17. (Original) An array comprising two or more polypeptides selected from the group consisting of SEQ ID NOs: 20-37.

18. (Original) A test kit comprising a primer or probe for measuring the expression level of a nucleic acid selected from SEQ ID NOs: 1-19.

19. (Original) The test kit of claim 18, further comprising one or more components selected from solutions for suspending or fixing tissue or cell samples, solutions for lysing cells, hybridization solutions, solutions for the isolation of nucleic acids, control samples, and instructions for using the kit.

20. (Original) A test comprising an antibody specific for a polypeptide selected from SEQ ID NOs: 20-37.

21. (Original) The test kit of claim 20, wherein the antibody is labeled.

22. (Original) The test kit of claim 20 or 21, further comprising one or more components selected from solutions for suspending or fixing tissue or cell samples, solutions for lysing cells, substrates, buffer reagents, blocker reagents, blotting reagents, control samples, and instructions for using the kit.